

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. - 38. (Cancelled)

39. (Currently Amended) A compound magnet assembly having a front face and comprising a plurality of segments, the segments each magnetized to provide the maximum magnetic field in a selected direction at ~~[[the same]]~~ a selected operating point spaced from the front face of the compound magnet assembly.

40. (Currently Amended) The compound magnet assembly according to claim 39 wherein each segment is magnetized in the direction of magnetization that, at the center of mass of the segment, provides the maximum contribution to the magnetic field in the selected direction at the selected point.

41. (Currently Amended) A compound magnet assembly having a front and a back face and comprising a plurality of segments, the segments each magnetized to provide substantially the maximum magnetic field in a selected direction at ~~[[the same]]~~ a selected operating point spaced from the front face, the back face being substantially contoured to follow a surface of constant contribution to magnetic field in the selected direction at the operating point.

42-44. (Cancelled)

45. (Currently Amended) A compound magnet assembly for applying magnetic field in a selected direction at a selected operating point, the magnet assembly comprising a front face generally facing the operating point, and an at least approximately curved back face facing away from the operating point, the back face

generally conforming to a constant contribution surface of the magnetic field in the selected direction.

46. (Currently Amended) The compound magnet assembly according to claim 45 wherein the magnet assembly is divided into a plurality of segments that are assembled together to form a compound magnet assembly.

47. (Currently Amended) The compound magnet assembly according to claim 46, wherein each segment comprises a front face, generally facing the operating point, the back face generally facing away from the operating point, the back face generally conforming to a constant contribution surface of the magnetic field in the selected direction.

48-50. (Cancelled)

51. (Currently Amended) The compound magnet assembly according to claim 47 wherein each segment is magnetized in the direction of magnetization that, at the center of mass of the segment, provides the maximum contribution to the magnetic field in the selected direction at the selected operating point.

52. (Currently Amended) The compound magnet assembly according to claim 46 wherein each segment is magnetized in the direction of magnetization that, at the center of mass of the segment, provides the maximum contribution to the magnetic field in the selected direction at the selected operating point.

53-57. (Cancelled)